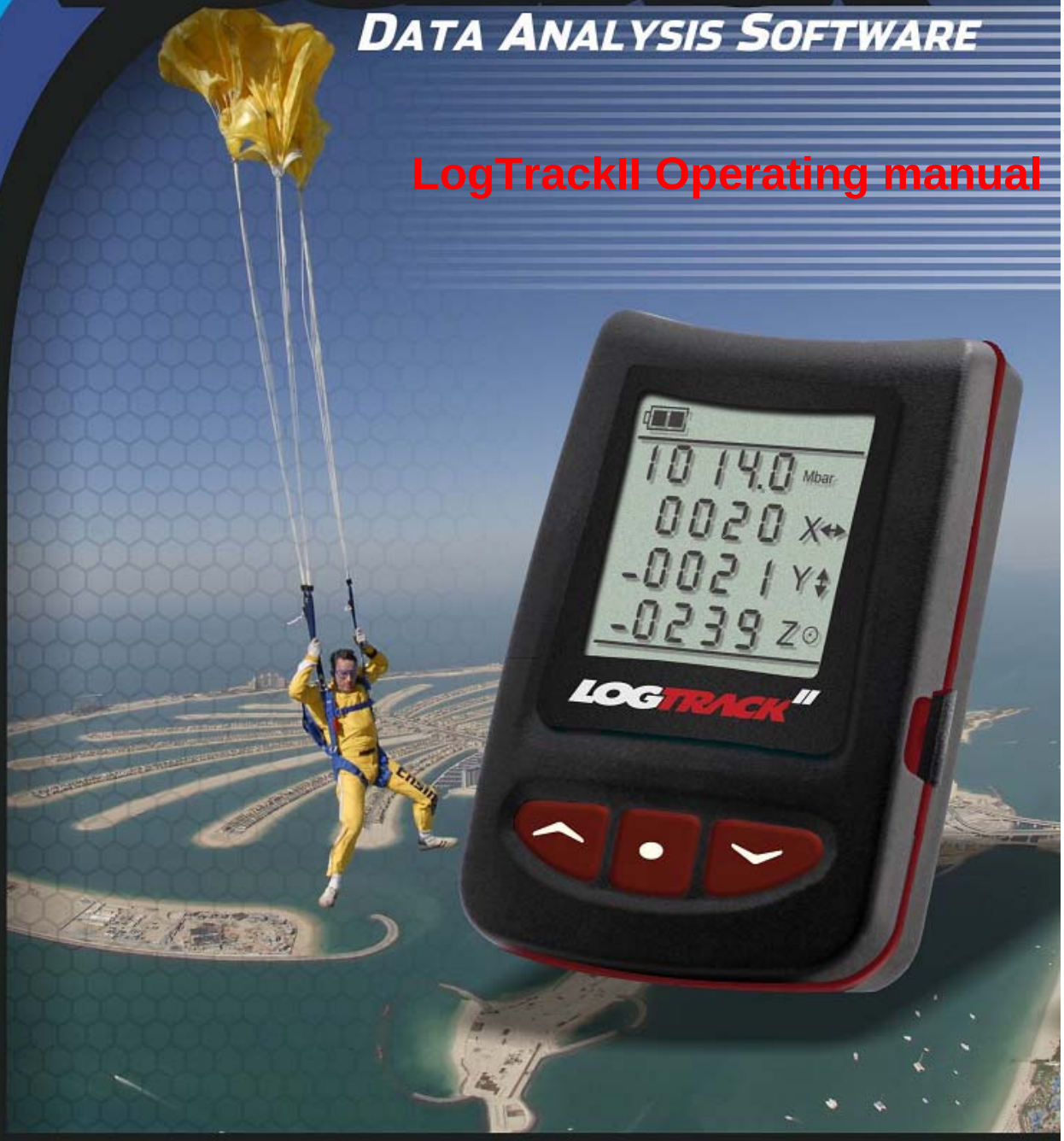
VER 2.0

LOGTRACK II

DATA ANALYSIS SOFTWARE

LogTrackII Operating manual



Rev. 0.9

FLIGHT PERFORMANCE SM

LARSEN & BRUSGAARD

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1. Introduction

The LogTrackII Data Logger is a very small, thin, low power, easy to use device for measuring barometric pressure, altitude and g-Force data.

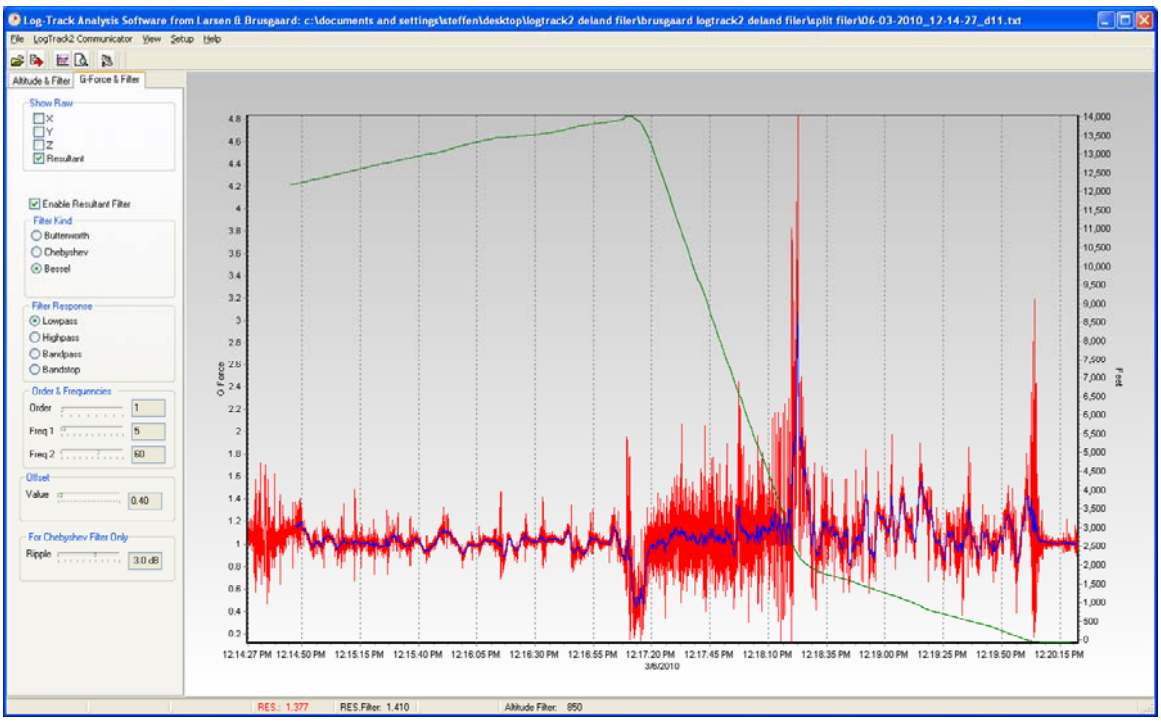
LogTrackII can be set to activate/deactivate at different trigger altitudes and can automatically store up to 100 separate jumps or up to 8 hours of recording time without any user input.

This ultra low power consumption device is specifically designed for skydiving, canopy flight-testing, and other pressure relevant environments and applications.
LogTrackII comprises a +/-16 g-force, 3-axis high-resolution accelerometer data recorder.
LogTrackII is the perfect data logger where G forces need to be examined relative to barometric pressure and altitude.

Among the features are:

- +/-16 g-force, 3-axis high-resolution accelerometer
- Barometric pressure sensor
- Large storage capacity (up to 8 hours recording time)
- Durable rubberized coating
- Super-thin curved design
- USB port for connection to PC using LogTrackII Data Analysis software
- Long lasting easy to find batteries
- On/off mode
- Built-In mounting holes for various pilot placements.

Using the LogTrackII Data Analysis software, recorded data can be downloaded to a PC. All information logged by the unit can be displayed in a fast, clean and concise charting format and can be archived for later data research and comparison.



2. Important: Jump Testing

Larsen & Brusgaard strongly recommends users of LogTrackII to make some practice test jumps with the LogTrackII before using it for specific project related tests.
This way the users can familiarize themselves with the LogTrackII unit and the LogTrackII PC software before spending time and money on business specific tests.

The LogTrackII may be put anywhere on the skydiver's body. However, the closer the unit is placed to the torso the more accurate the g-force measurements will be.
Based on many test jumps, Larsen & Brusgaard does not recommend placing the LogTrackII on the hand or the arm due to movements and differences in air pressure. Different hand/arm positions will not accurately record G-force data or the area of actual canopy opening (deployment).
Placing the LogTrackII on the helmet will give more reliable data, but again, the head can also make movements and result in inaccurate readings of G-force data and the area of actual canopy opening (deployment).

3. System Requirements

Windows XP/XP64, Vista/Vista x64, Windows 7/Windows 7 x64
CD-ROM drive
One unoccupied USB port on your PC

4. Package Contents

Unpack the package and inspect all the items carefully.
If any of the items are damaged or missing or if you have any questions please contact Larsen & Brusgaard.

LogTrackII device:

100cm Micro-USB to USB cable for desktop PC

LogTrackII Data Analysis software PC CD-ROM

5. Description

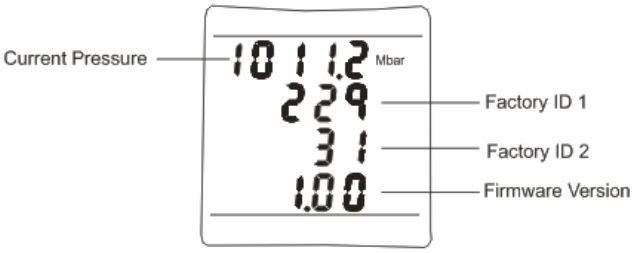
1. LCD display
2. Left button
3. Middle button
4. Right button
5. Micro USB jack

6. Powering ON

The LogTrackII has been powered OFF prior to shipping from our factory. To power ON, press and hold any key until the LogTrackII beeps, then release the button.

The LogTrackII runs a self-test and displays all icons:

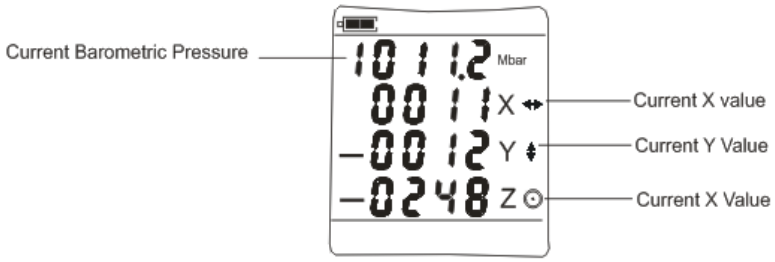
It then displays the firmware version number together with L&B factory reference numbers,



Note:
If factory ID 1 is not 229 and if factory ID 2 is not 31 the unit is defective and must be returned to L&B.

It then switches to a screen display referred to as the “Main Window”

7. Main Window



This window consists of the following:

Current Barometric Pressure:
This is also the "Ground Level" pressure when calculating the altitude after take-off

Current X, Y and Z value:
The values are "bit" values where 1 bit = 4mg
In the LogTrackII Data Analysis software all recorded 3-axis acceleration data are shown as g-Force values within the range +/- 16g

To view the Start/Stop logging trigger altitudes, press and hold .

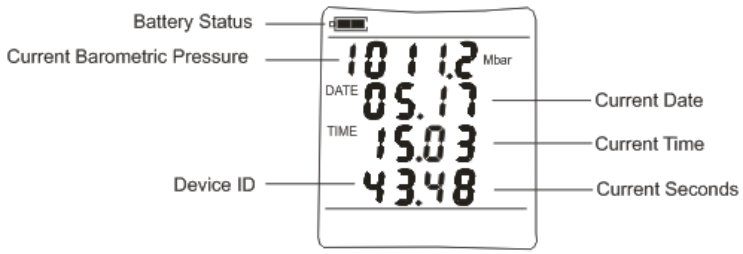
LogTrackII will switch between the start and stop logging trigger altitude heights.
In this screen example LogTrackII will automatically start logging at 12000 feet and stop logging at 1000 feet.

To change the altitudes or switch to feet/meters please read section:
"Change Trigger Altitudes"

NOTE:
If no button has been pressed within 30 seconds LogTrackII will return to "Standby Mode" (showing Current Barometric Pressure, Date, Time, seconds and Device ID)

To enter the Main window from Standby Mode, press .

8. Standby Mode



Battery Status:

Full capacity: Symbol shows two black bars inside the battery icon.
Half capacity: Symbol shows one black bar inside the battery icon.
Low capacity: Symbol shows no black bars, just an “empty” battery icon.
Batteries should be replaced as soon as possible if low capacity displays.

Current Barometric Pressure:

This is also the “Ground Level” pressure when calculating the altitude after take-off

Current Date:

Can only be changed from the LogTrackII Data Analysis PC software

Current Time:

Can only be changed from the LogTrackII Data Analysis PC software

Current Seconds:

Can only be changed from the LogTrackII Data Analysis PC software

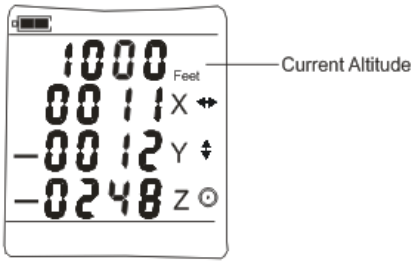
Device ID:

Used to identify the device.
. This number can only be changed from the LogTrackII Data Analysis PC software

NOTE:
To enter the Main window from “Standby Mode”, press .
The LogTrackII automatically switches OFF 14 hours after entering “Standby Mode”
.

9. Jump Mode

Shortly after take-off the current barometric pressure will switch to current altitude in either feet or meters indicating that the unit has switched to “Jump Mode”.



“Jump Mode” is required before automatic or manual logging.

NOTE:

To enter “Jump Mode” from “Main Window” press and hold until the unit beeps and altitude in feet / meters is shown...

To enter “Jump Mode” from “Standby Mode” press . then press and hold until the unit beeps and altitude in feet / meters is shown...

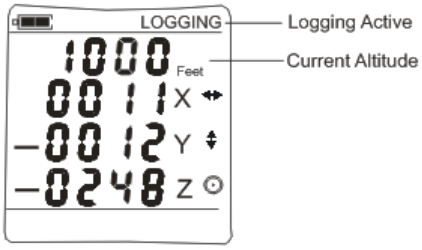
If no altitude change is detected by the unit, within 30 seconds LogTrackII will return to “Main Window”.

10. Start / Stop logging

The LogTrackII can begin logging automatically or manually. The LogTrackII can handle up to 100 separate log files up to a total of 8 hours of logs.
When downloading into the LogTrackII Data Analysis software, each log is created with a filename including Date, Time and Device ID.

Automatic Start and Stop:

If the start logging trigger altitude are not 0, the LogTrackII will automatically start and stop logging at the preset height.
Logging will start automatically from any mode (NOT OFF) with no user input required.



When LogTrackII passes the start logging trigger altitude, the device will sound one beep, show “Logging” on the display and begin logging the altitude and 3-axis data.

When LogTrackII passes the stop logging Trigger altitude, the device will sound one beep, switch off “Logging” on the display and stop logging.

Manual Start and Stop:

At any time, on the ground or in the airplane Manual Start / Stop is possible IF the Start logging trigger altitude are set to 0,

Start:

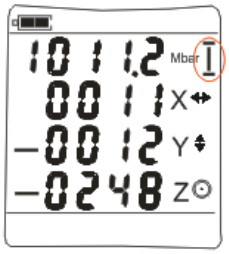
First enter “Jump Mode”, (The LogTrackII shows Altitude)
Then Press and down and wait for 5 beeps and the Logging icon will show.

Stop:

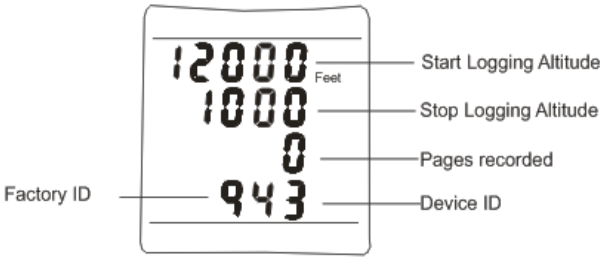
Press and and wait for 5 beeps and the Logging icon will switch off.

Note:
When the “Logging” icon shows, the unit is logging data and an automatic or manual stop is required to stop logging

11. Changing Trigger Altitudes



1. Press . and release quickly. The I icon will turn on and off (disappear)
2. When the I icon appears again, immediately press . and keep it pressed. The I icon will disappear again
3. When the I icon appears again, release . immediately



1. The LogTrackII now flashes in the Start Trigger Altitude.
2. Press or to change Start Trigger Altitude.
3. Press . again and the Stop Trigger Altitude flashes.
4. Press or to change Stop Trigger Altitude
5. Press . again and the Feet / Meters icon flashes
6. Press or to change between Feet / Meters
7. Press . again to leave “Change Trigger Altitude”

Note:
If setting Start trigger altitude to 0, Automatic Start and Stop is disabled and only manual start / stop is possible.

12. Recorded pages

LogTrackII can store up to 8 hours of data (8000 pages), in max. 100 separate log files.
To view how many total pages are stored on the device, please read section “Change Trigger Altitudes”.

13. Auto OFF

The LogTrackII automatically switches OFF 14 hours after the last jump or 14 hours after last pressing any key, whichever comes first.

NOTE:
When switched OFF the LogTrackII cannot be used for jumping.
Customer settings, log data and clock are not lost when switched OFF.
To power the LogTrackII on, see section 6 Power On.

14. Download data

In “Standby Mode” or Main Window”, plug the Micro USB cable into the LogTrackII and connect to PC USB port.
In the LogTrackII Data Analysis software application, the device will show.

15. Delete data

Either:
Reset the LogTrackII (See section “Resetting the LogTrackII”) while pressing . down.
Keep . pressed for about 5 seconds until 5 beeps are completed.
LogTrackII recorded data is now delete

Or:
Delete recorded data from the LogTrackII Data Analysis PC software application.

Note:
CAUTION! After deleting data there is no way to restore data**.**

16. Resetting the LogTrackII

Press a paperclip into the tiny hole on the rear side of the unit and release. The unit will restart.

NOTE: Reset the unit after battery replacement and when troubleshooting.
Customer settings and recorded logs are kept protected in the unit memory when removing batteries. However, the built-in clock may again need to be set to the correct time.

17. Battery replacement

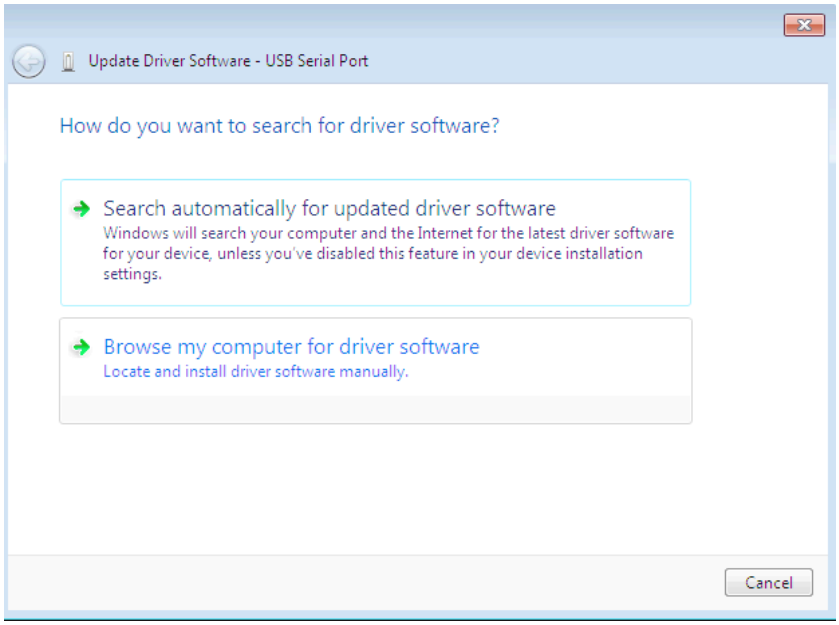
Carefully remove screw from battery cover and remove batteries.
Install new batteries and note polarity.
Use only CR-2325 or equivalent.

NOTE: Reset the LogTrackII after replacing batteries.
Customer settings and recorded logs are kept protected in the unit memory when removing batteries. However, the built-in clock may again need to be set to the correct time.

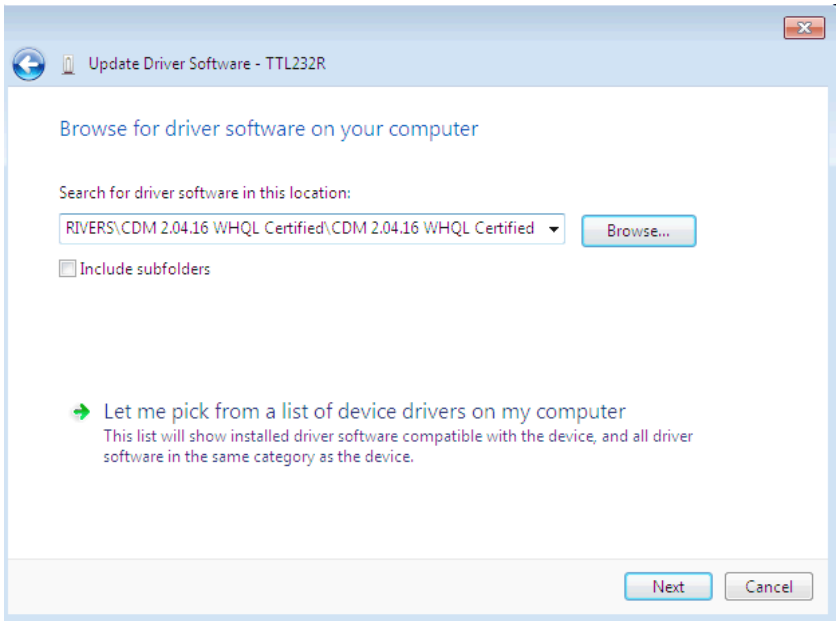
18. LogTrackII Driver Installation Windows 7 / Windows 7 X64

Connect the device to a spare USB port on your PC. Windows Found New Hardware Wizard will launch

The OS comes up with a **“Found New Hardware Wizard”** which guides you through the installation procedure. Select the option “Browse my computer for driver software” as shown in the right screen shot.

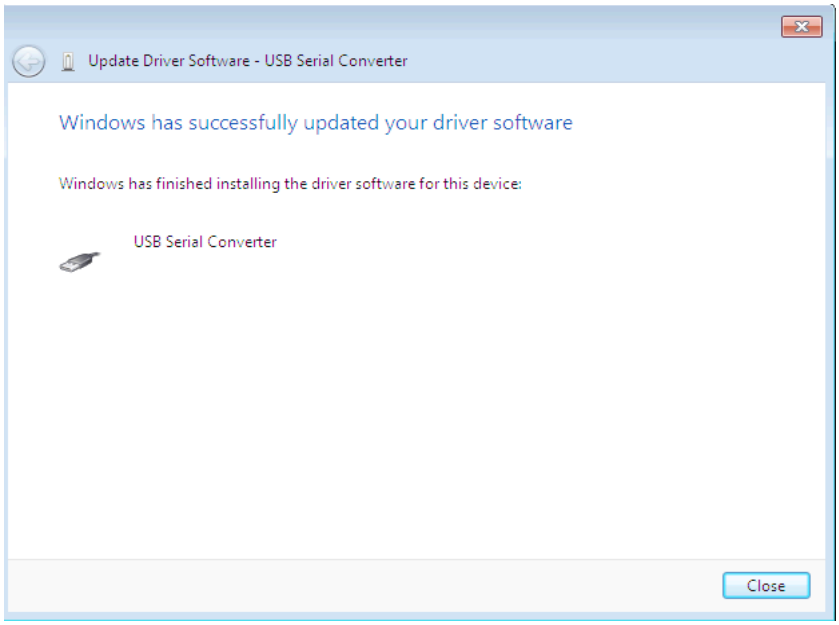

Update Driver Software - USB Serial Port
How do you want to search for driver software?
Search automatically for updated driver software
Windows will search your computer and the Internet for the latest driver software for your device, unless you've disabled this feature in your device installation settings.
Browse my computer for driver software
Locate and install driver software manually.
Cancel

Browse for driver software on the CD-ROM and enter the file path in the combo-box ("Z:\ USB Drivers" in the example shown right) or browse to it by clicking the browse button. Once the file path has been entered in the box, click next to proceed.


Update Driver Software - TTL232R
Browse for driver software on your computer
Search for driver software in this location:
RIVERS\CDM 2.04.16 WHQL Certified\CDM 2.04.16 WHQL Certified
Browse...
Include subfolders
Let me pick from a list of device drivers on my computer
This list will show installed driver software compatible with the device, and all driver software in the same category as the device.
Next
Cancel

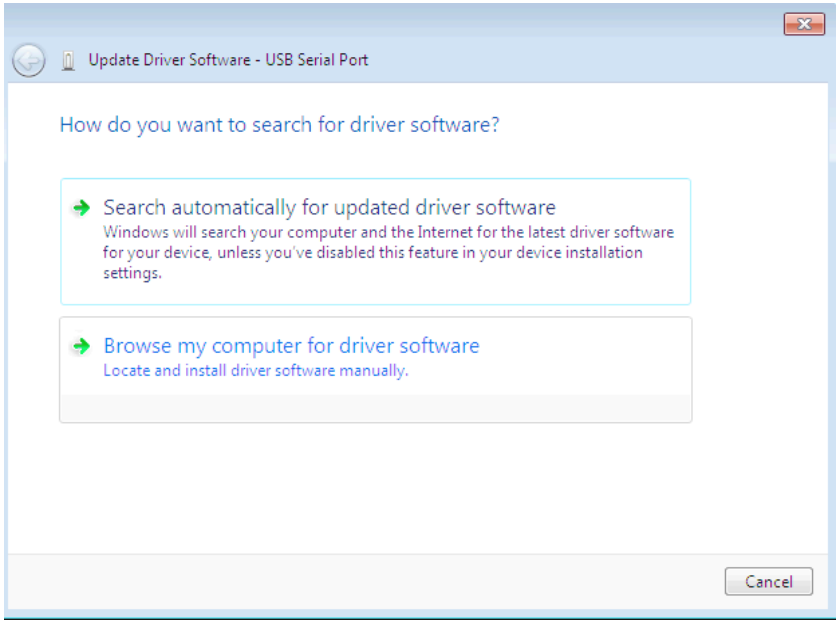
When the installation has finished a completion screen is displayed.

Click on **“Close”** to finish the driver installation.

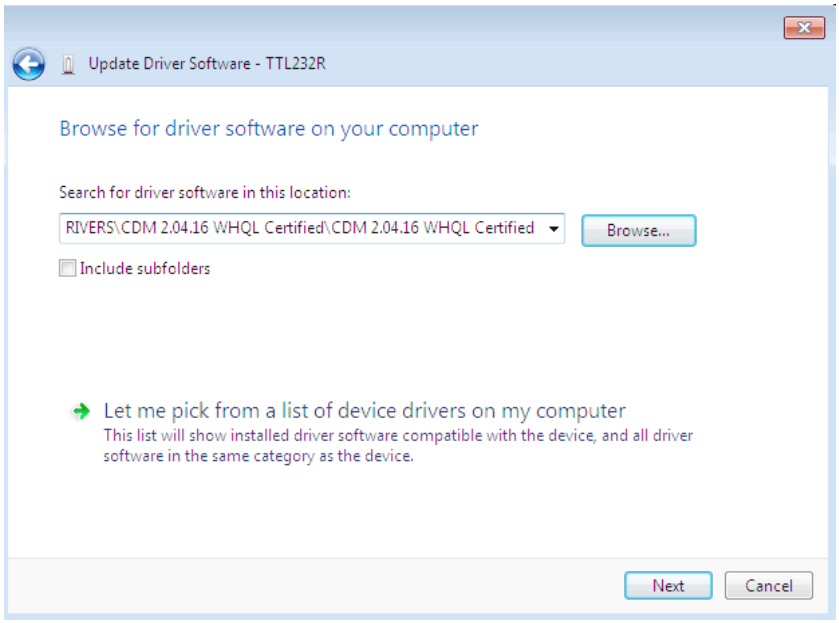

Update Driver Software - USB Serial Converter
Windows has successfully updated your driver software
Windows has finished installing the driver software for this device:
USB Serial Converter
Close

The Found New Hardware Wizard will continue by installing the USB Serial Port driver for the second part of the device. The procedure for installing the second part is identical to that of installing the first part from the first screen of the Found New Hardware Wizard.

The OS comes up with a **“Found New Hardware Wizard”** which guides you through the installation procedure. Select the option “Browse my computer for driver software” as shown right screen shot.

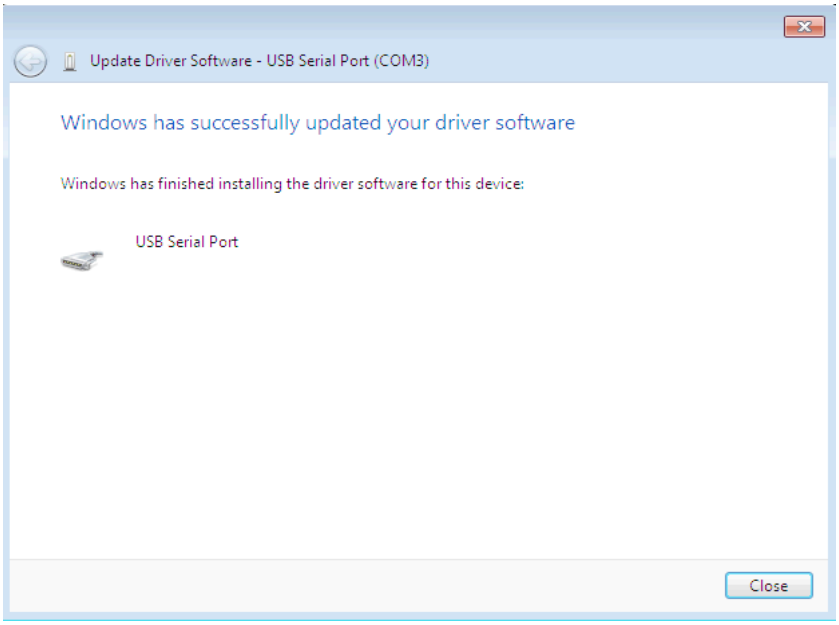

Update Driver Software - USB Serial Port
How do you want to search for driver software?
Search automatically for updated driver software
Windows will search your computer and the Internet for the latest driver software for your device, unless you've disabled this feature in your device installation settings.
Browse my computer for driver software
Locate and install driver software manually.
Cancel

Browse for driver software on the CD-ROM and enter the file path in the combo-box ("Z:\ USB Drivers" in the example right) or browse to it by clicking the browse button. Once the file path has been entered in the box, click next to proceed.


Update Driver Software - TTL232R
Browse for driver software on your computer
Search for driver software in this location:
RIVERS\CDM 2.04.16 WHQL Certified\CDM 2.04.16 WHQL Certified
Browse...
Include subfolders
Let me pick from a list of device drivers on my computer
This list will show installed driver software compatible with the device, and all driver software in the same category as the device.
Next
Cancel

When the installation has finished a completion screen is displayed.

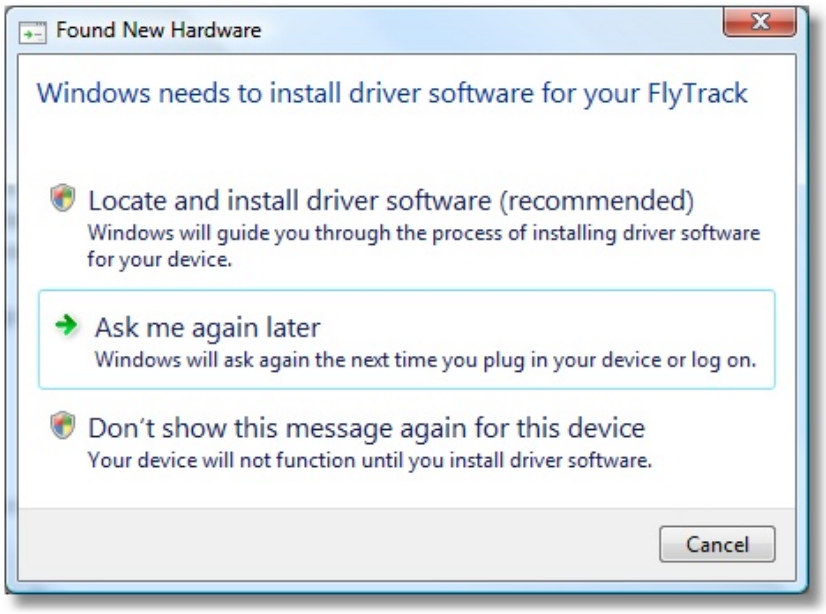
Click on **“Close”** to finish the driver installation.


Update Driver Software - USB Serial Port (COM3)
Windows has successfully updated your driver software
Windows has finished installing the driver software for this device:
USB Serial Port
Close

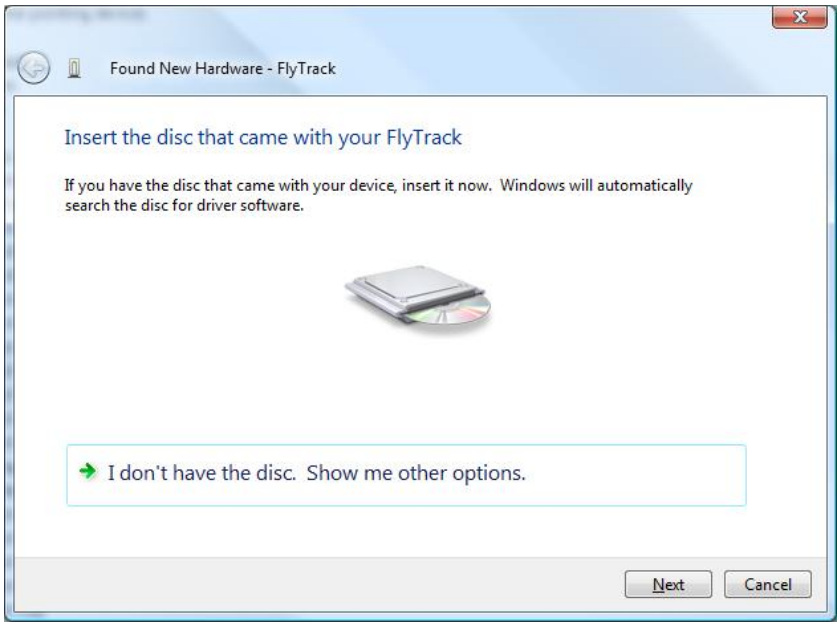
19. LogTrackII Driver Installation Vista / Vista X64

Connect the device to a spare USB port on your PC. Windows Found New Hardware Wizard will launch

The OS comes up with a **"Found New Hardware Wizard"** which guides you through the installation procedure. Select the option "Locate and install driver software (recommended)

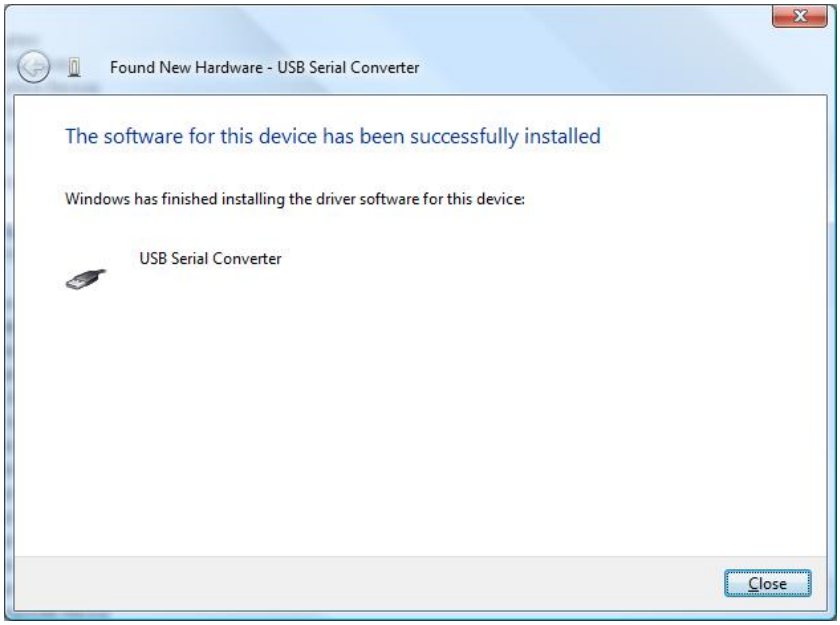

Found New Hardware
Windows needs to install driver software for your FlyTrack
Locate and install driver software (recommended)
Windows will guide you through the process of installing driver software for your device.
Ask me again later
Windows will ask again the next time you plug in your device or log on.
Don't show this message again for this device
Your device will not function until you install driver software.
Cancel

Insert the CD-ROM with the LogTrackII drivers and click on **"Next".**


Found New Hardware - FlyTrack
Insert the disc that came with your FlyTrack
If you have the disc that came with your device, insert it now. Windows will automatically search the disc for driver software.
I don't have the disc. Show me other options.
Next
Cancel

When the installation has finished a completion screen is displayed.

Click on **“Close”** to finish the driver installation.


Found New Hardware - USB Serial Converter
The software for this device has been successfully installed
Windows has finished installing the driver software for this device:
USB Serial Converter
Close

The Found New Hardware Wizard will continue by installing the USB Serial Port driver for the second part of the device. The procedure for installing the second part is identical to that of installing the first part from the first screen of the Found New Hardware Wizard.

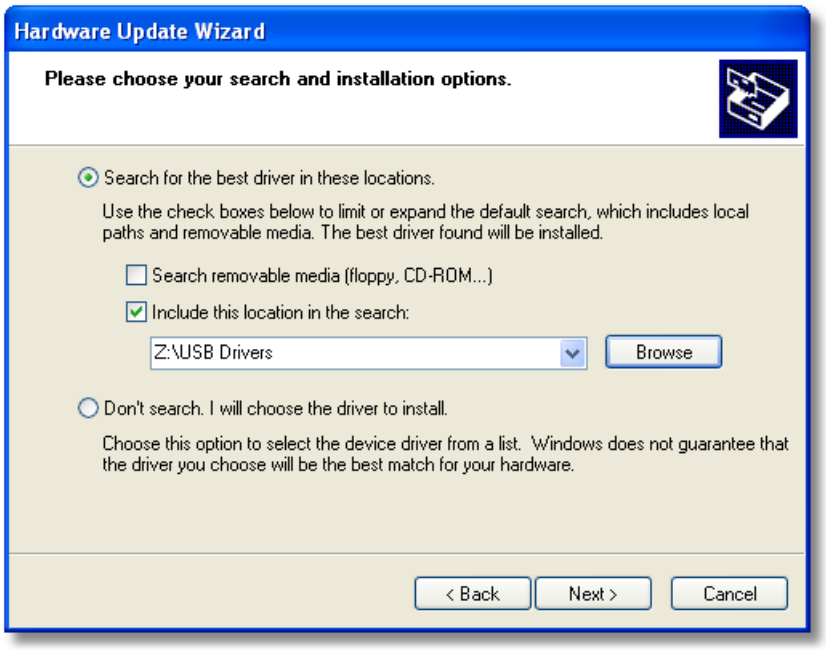
20. LogTrackII Driver Installation XP / XP64

Connect the device to a spare USB port on your PC. Windows Found New Hardware Wizard will launch.

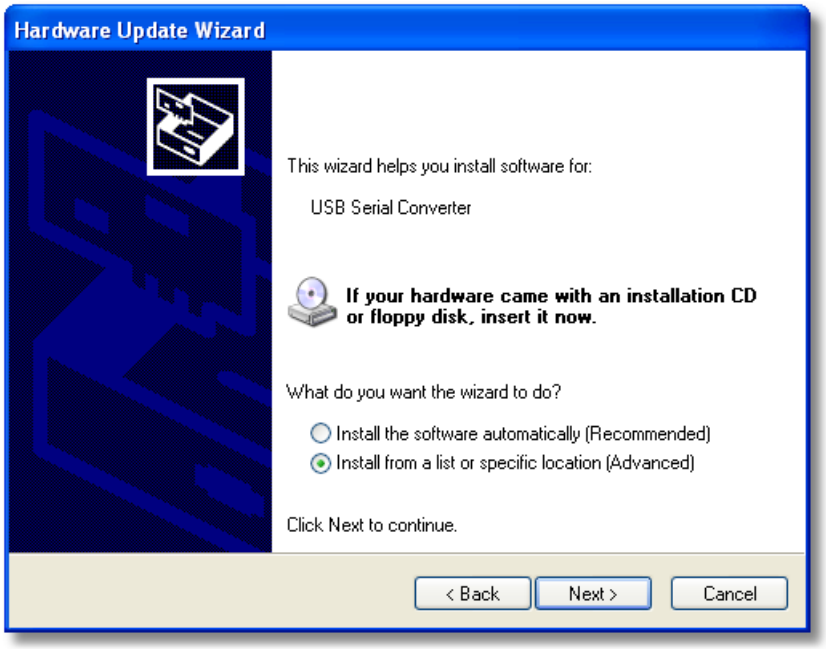
Select "No, not this time" from the options available and then click "Next" to proceed with the installation.

Hardware Update Wizard
Welcome to the Hardware Update Wizard
Windows will search for current and updated software by looking on your computer, on the hardware installation CD, or on the Windows Update Web site (with your permission).
Read our privacy policy
Can Windows connect to Windows Update to search for software?
Yes, this time only
Yes, now and every time I connect a device
No, not this time
Click Next to continue.
< Back
Next >
Cancel

Select "Search for the best driver in these locations" and enter the file path in the combo-box ("Z:\ USB Drivers" in the example right) or browse to it by clicking the browse button. Once the file path has been entered in the box, click next to proceed.


Hardware Update Wizard
Please choose your search and installation options.
Search for the best driver in these locations.
Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.
Search removable media (floppy, CD-ROM...)
Include this location in the search:
Z:\USB Drivers
Browse
Don't search. I will choose the driver to install.
Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.
< Back
Next >
Cancel

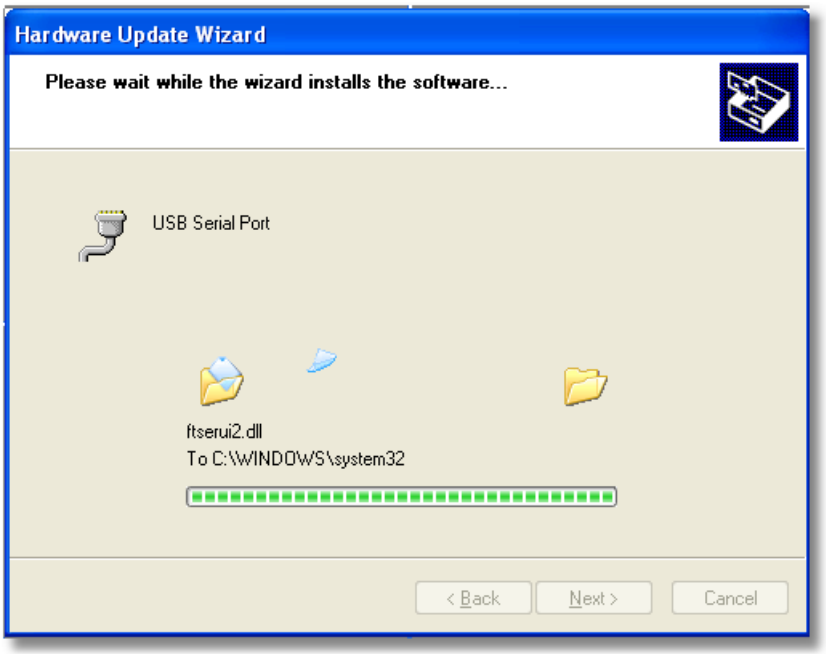
Select "Install from a list or specific location (Advanced)" as shown to the right and then click "Next".


Hardware Update Wizard
This wizard helps you install software for:
USB Serial Converter
If your hardware came with an installation CD or floppy disk, insert it now.
What do you want the wizard to do?
Install the software automatically (Recommended)
Install from a list or specific location (Advanced)
Click Next to continue.
< Back
Next >
Cancel

If Windows XP is configured to warn when unsigned (non-WHQL certified) drivers are about to be installed, the following screen will appear unless installing a Microsoft WHQL certified driver. Click on "Continue Anyway" to continue with the installation. If Windows XP is configured to ignore file signature warnings, no message will appear.

Hardware Installation
The software you are installing for this hardware:
USB Serial Converter
has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)
Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.
Continue Anyway
STOP Installation

The following screen will appear as Windows XP copies the required driver files.



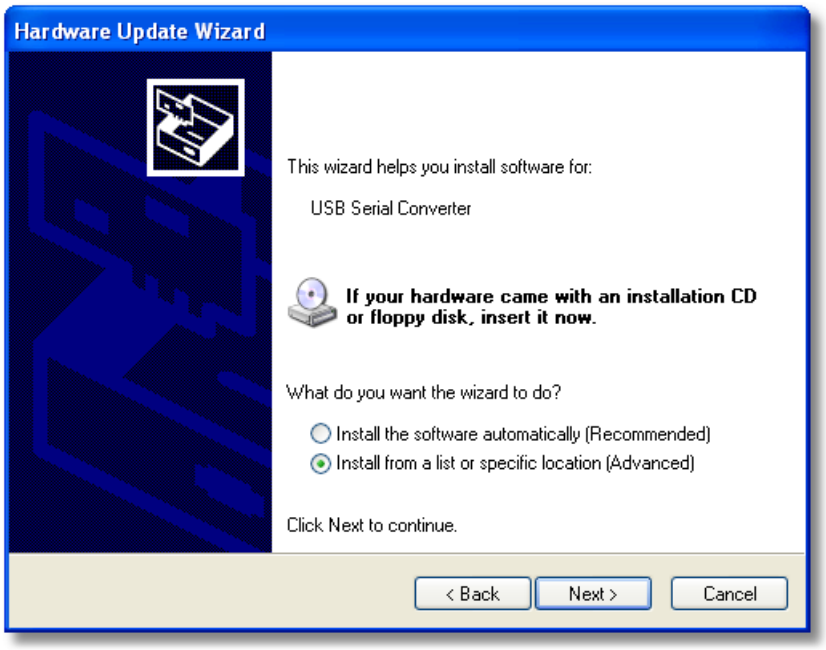
Windows should then display a message indicating that the installation was successful. Click "Finish" to complete the installation for the first part of the device.

The Found New Hardware Wizard will continue by installing the USB Serial Port driver for the second part of the device. The procedure for installing the second part is identical to that of installing the first part from the first screen of the Found New Hardware Wizard.

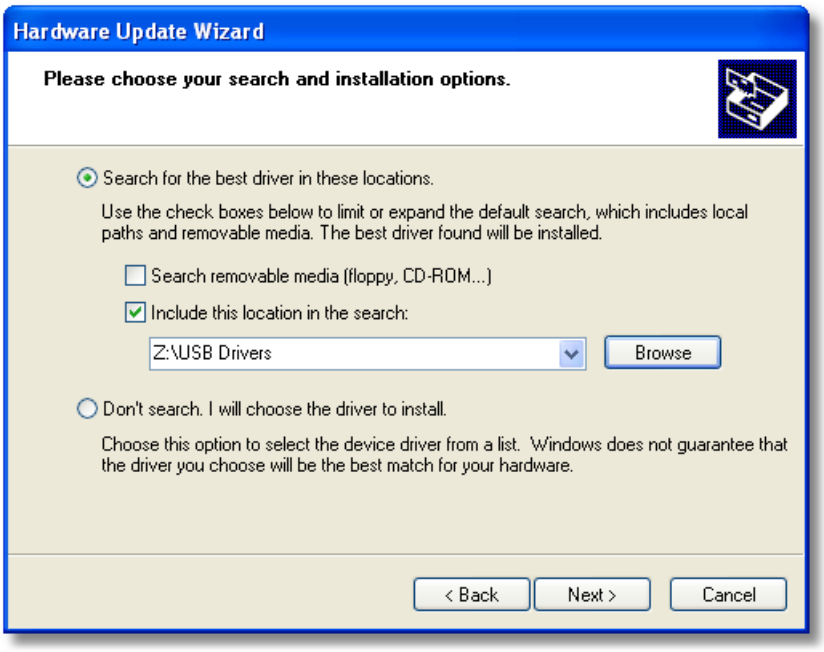
The Found New Hardware Wizard will launch automatically to install the COM port emulation drivers. As before, select "No, not this time" From the options and click "Next" to proceed with the installation

Hardware Update Wizard
Welcome to the Hardware Update Wizard
Windows will search for current and updated software by looking on your computer, on the hardware installation CD, or on the Windows Update Web site (with your permission).
Read our privacy policy
Can Windows connect to Windows Update to search for software?
Yes, this time only
Yes, now and every time I connect a device
No, not this time
Click Next to continue.
< Back
Next >
Cancel

Select "Install from a list or specific location (Advanced)" as shown below and then click "Next


Hardware Update Wizard
This wizard helps you install software for:
USB Serial Converter
If your hardware came with an installation CD or floppy disk, insert it now.
What do you want the wizard to do?
Install the software automatically (Recommended)
Install from a list or specific location (Advanced)
Click Next to continue.
< Back
Next >
Cancel

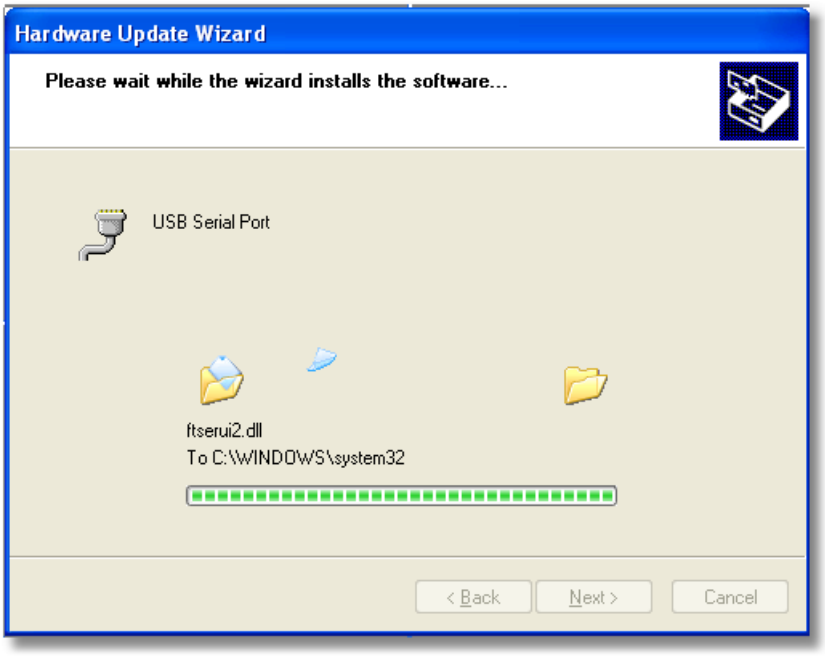
".Select "Search for the best driver in these locations" and enter the file path in the combo-box ("Z:\ USB Drivers" in the example right) or browse to it by clicking the browse button. Once the file path has been entered in the box, click next to proceed.


Hardware Update Wizard
Please choose your search and installation options.
Search for the best driver in these locations.
Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.
Search removable media (floppy, CD-ROM...)
Include this location in the search:
Z:\USB Drivers
Browse
Don't search. I will choose the driver to install.
Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.
< Back
Next >
Cancel

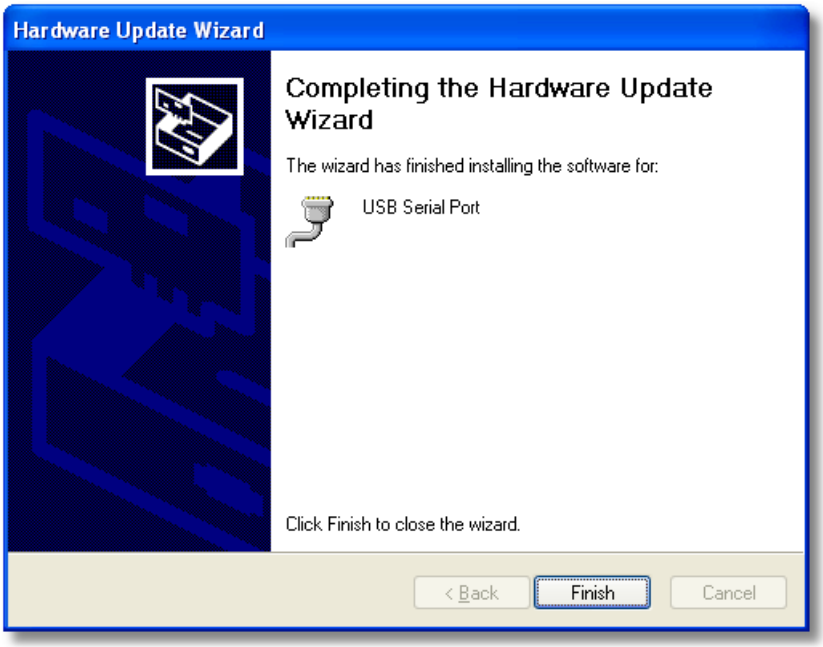
If Windows XP is configured to warn when unsigned (non-WHQL certified) drivers are about to be installed, the following screen will appear unless installing a Microsoft WHQL certified driver. Click on "Continue Anyway" to continue with the installation. If Windows XP is configured to ignore file signature warnings, no message will appear.

Hardware Installation
The software you are installing for this hardware:
USB Serial Converter
has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)
Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.
Continue Anyway
STOP Installation

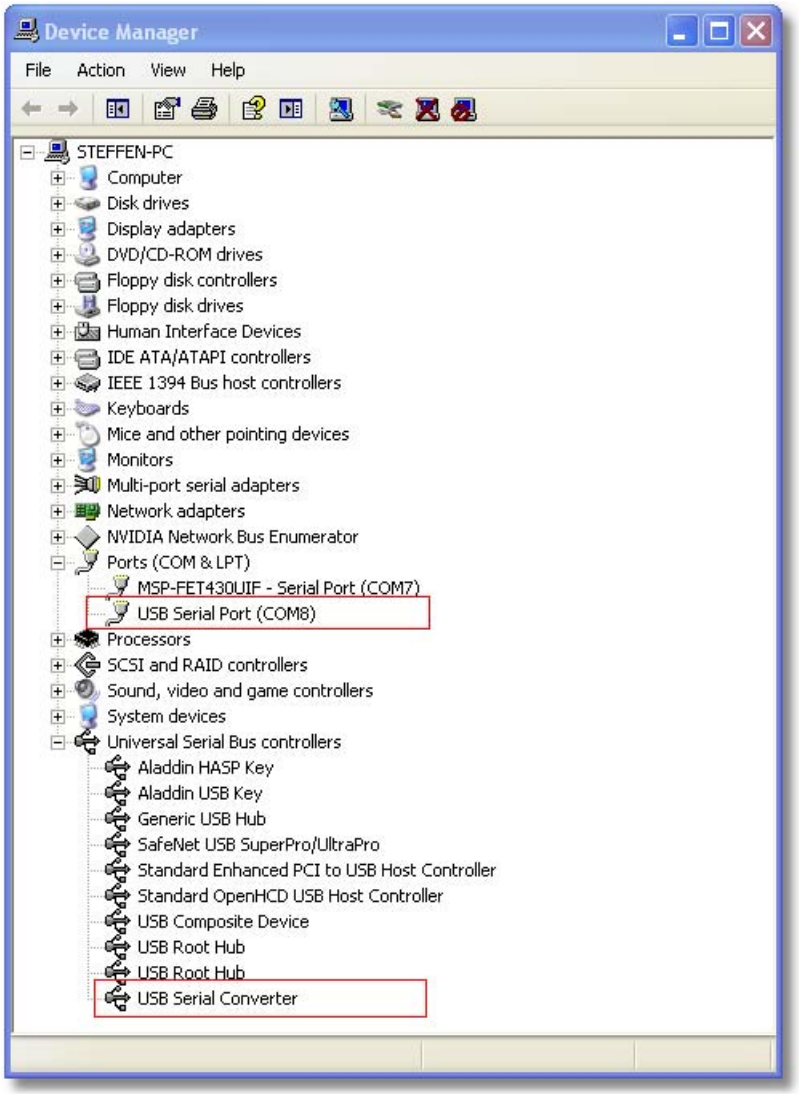
The following screen will be displayed as Windows XP copies the required driver files.



Windows should then display a message indicating that the installation was successful. Click "Finish" to complete the installation for the second port of the device.



Open the Device Manager (located in "Control Panel\System" then select the "Hardware" tab and click "Device Manger") and select "View > Devices by Type", the device appears as a "USB Serial Converter" with an additional COM port with the label "USB Serial Port".

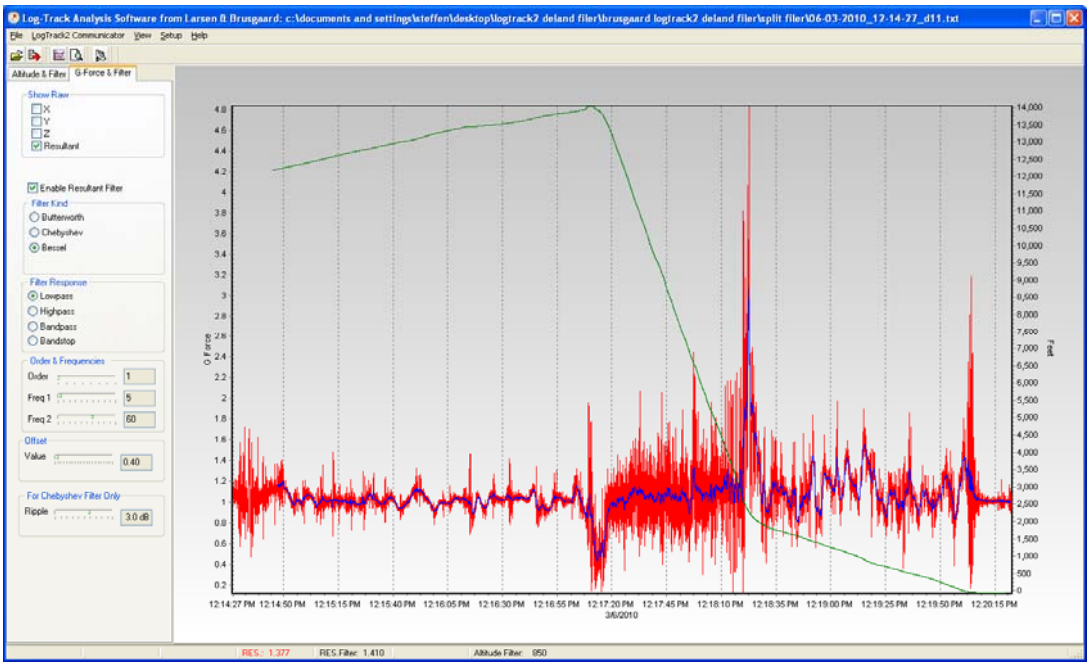


21. LogTrackIIII Analysis Software

Using the LogTrackII Data Analysis software, recorded data can be downloaded to a PC. All information logged by the unit can be displayed in a fast, clean and concise charting format and can be archived for later data research and comparison.

Among the features are:

- Displays barometric pressure, altitude and 3-Axis g-force data over time in chart
- View raw or filtered data
- Zoom to the finer details in the graphical data chart
- Fully printable charts
- Automatic scale can be activated or deactivated
- Date can be exported for other uses as well as shared with other LogTrackII users



Please read the LogTrackII Analysis Software User Manual for more information.

22. Specifications

Mechanical:

Dimensions: 52 x 40 x 12 mm (2.16 x 1.57 x 0.47 inches)
Weight: 30 grams (1.05 oz.)
Battery type: 2 x CR 2325 or equivalent
Battery Life: 1-2 years depending on usage.

Data logger:

Storage capacity: 8 hours (8000 pages)
Continued storage of 100 separate logs.

Accelerometer:

3-axis accelerometer
Sampling rate: 48Hz
Measurement range: X, Y and Z: +/-16g.

Accuracy
+/- 50mg

Altimeter:

Sampling rate: 4Hz
Maximum logging altitude: 39,999 feet (12,191 m)

Tolerances:
Below 1000 feet (300 meter): +/- 10 feet
Above 1000 feet (300 meter): +/- 1.2%

Date and Time:

Tolerances:
+/- 4 min/month

Operating Temperature Range:

-30C to +60C (-22F to +140F)

Interface Communication.

Micro USB for download and setup.

Software:

LogTrackII Analysis Software included on CD-ROM